breakout ABSTRACT

VISION to REALITY 2005

TITLE

The Public Health Air Surveillance Evaluation (PHASE) Project: Successes and Lessons Learned from a Multi-Agency, Multi-State, Trans-disciplinary Collaboration

THEME

Foster Collaborations Among Health and the Environment

KEYWORDS

particulate matter (PM), ozone, asthma, cardiovascular disease, methods, collaboration

BACKGROUND

Ambient air characterization data are extremely useful for environmental public health tracking (EPHT) of many hazards of interest. Such data provide temporal and spatial variables. They are available nationwide and are subject to extensive QA/QC standards. However, significant issues must be addressed for these data to be used effectively. With monitors typically concentrated in urban areas, few data exist for rural populations. Furthermore, there are substantive temporal gaps in these data; particulate matter (PM) data are typically only available once every 3–6 days and ozone data are often only available in warmer months. Finally, because data from discrete monitors provide data for a specific point, interpolation is required to estimate concentrations across larger geographical areas. No standardized “best” method exists for doing that, and the EPHT utility of methods that are used has not been evaluated.

OBJECTIVE(S)

To address these and other issues, a project team from the Centers for Disease Control and Prevention (CDC), the U.S. Environmental Protection Agency (EPA), and three grantee states (Maine, New York, and Wisconsin), was established in February 2004. The primary objective of the resulting Public Health Air Surveillance Evaluation (PHASE) project is to develop and evaluate air quality characterization methods for linking with cardiovascular and respiratory health data to improve public health surveillance and other activities.

METHOD(S)

Air measures include daily estimated PM and ozone concentrations from ambient air monitors, models, satellites, and statistically interpolated and combined sources (i.e., modeled and monitored data). The air measures are being evaluated with health outcome measures, including hospital discharge, emergency department, and mortality data for cardiovascular and respiratory effects. Evaluation criteria include (a) cost to generate, access, analyze, and store the data; (b) spatial and temporal resolution and coverage compatibility of the datasets; and (c) validity of resulting observed correlations between hazard intensity and health outcomes.

RESULT(S)

The panel discussions will focus on linkage and analysis results from each state, team successes, lessons learned, and future activities, with emphasis on the following:

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- Consistency of data availability, linkage, and analysis methods
- Public health goals and utility of the results
- Strengths and limitations of different air characterization approaches
- EPA and National Oceanic and Atmospheric Administration (NOAA) plans for generation and delivery of ozone and PM data to EPHT programs
- Challenges and synergies of a trans-disciplinary, multi-agency, scientific collaboration

DISCUSSION/RECOMMENDATION(S)

The EPHT Air and Health Measures Workgroup recently arrived at a consensus recommendation that core measures for EPHT Network implementation include PM and ozone, plus asthma hospital discharge and emergency department data. Linkage and analysis methods also should be standardized. The following PHASE results and final products contribute to these priority areas:

- Evaluation of methods for generating ozone and PM air characterization for integration with health data
- Development of data linkage methods
- Assessment of potential analysis methods
- Literature review of health effects related to air pollution
- Assessment of how these methods apply to the national EPHT effort

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